

Application Serial No. 10/018,659  
Amendment after final dated February 2, 2005  
Reply to final Office action of November 3, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for preparing a sintered structural steel part with a carbon content of about from 0.1% up to 2% by weight, comprising:  
pressing an agglomerated spherical soft iron-based powder containing about from 0.5% to 2% by weight of a thermo-reversible hydrocolloid as a binder to a green body of high density,  
heating the green body to a temperature of about 450-650°C under a controlled atmosphere to remove the non-carbon content of the binder, and  
then sintering the green body at a temperature of about 1100-1400°C to allow the remaining carbon remaining in the binder to diffuse homogeneously into the sintered body, giving structural parts of high density and having high strength properties.
2. (Original) A method according to claim 1, characterised in that the hydrocolloid is gelatin.
3. (Previously presented) A method according to claim 1, characterised in that the agglomerated powder in addition comprises fine-grained graphite powder.
4. (Previously presented) A method according to claim 1, characterised in that the heating at 450-650°C takes place under a protective atmosphere to prevent oxidation.
5. (Previously presented) A method according to claim 1, characterised in that the heating at 450-650°C takes place under an atmosphere which allows part of the carbon to be removed.
6. (Previously presented) Structural steel part of high density and high strength, characterised in being prepared by a method according to claim 1.
7. (Presently presented) The method according to claim 1, wherein said method prepares a sintered structural steel part with a carbon content of more than about 0.4% by weight.
8. (Previously presented) The method according to claim 1, wherein said method prepares a sintered structural steel part with a carbon content of more than about 0.5% by weight.

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9. (Previously presented) The method according to claim 1, wherein said method prepares a sintered structural steel part with a carbon content of more than about 0.145% by weight.

10. (Previously presented) The method according to claim 1, wherein said method prepares a sintered structural steel part with a carbon content of about 0.4% to 2% by weight.

11. (Presently presented) The method according to claim 3, wherein said method prepares a sintered structural steel part with a carbon content of more than about 0.145% by weight.

12. (Previously presented) The method according to claim 3, wherein said method prepares a sintered structural steel part with a carbon content of about 0.4% to 2% by weight.

13. (Currently amended) A method for making a high strength steel part from a soft iron-based powder, comprising:

mixing a soft iron-based powder with a thermo-reversible hydrocolloid binder into an agglomerated powder, said hydrocolloid binder acting as a means to add carbon to the powder,  
pressing said agglomerated powder to a green body,

heating the green body to a temperature of about 450-650°C under a protective atmosphere that prevents oxidation to remove the non-carbon content of the binder substantially, and

sintering the green body at a temperature of about 1100-1400°C to allow the carbon remaining in the binder to diffuse homogeneously into the sintered body and create a structural part of high strength.

14. (Previously presented) The method according to claim 13, wherein said protective atmosphere enables removal of the non-carbon content substantially without removal of the carbon content.

15. (Previously presented) The method according to claim 14, wherein said method prepares a steel part with a carbon content of more than about 0.4% by weight.

16. (Previously presented) The method according to claim 14, wherein said method prepares a steel part with a carbon content of more than about 0.5% by weight.

17. (Previously presented) The method according to claim 14, wherein said method prepares a steel part with a carbon content of more than about 0.145% by weight.

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18. (Previously presented) The method according to claim 1, wherein said method prepares a steel part with a carbon content of about 0.4% to 2% by weight.

19. (Currently amended) A method for making a high strength steel part by simple pressing and sintering of metal powder, comprising:

mixing an agglomerated powder having a soft iron-based powder and a binder that acts as a means to add carbon to the powder,

pressing said agglomerated powder to a green body,

heating the green body under a protective atmosphere that prevents oxidation to remove the non-carbon content of the binder substantially without removal of carbon content from the binder, and

sintering the green body to create a structural part of high strength.

20. (Previously presented) The method according to claim 19, wherein said method prepares a steel part with a carbon content of about .4% to 2% by weight.